Economic Analysis of Water Quality Based Effluent Limits for the Sun Prairie Village Wastewater Treatment Facility

EPA has requested an economic analysis of water quality based effluent limits for nutrients for the Sun Prairie Village County Water and Sewer District (Sun Prairie) wastewater treatment facility (WWTF), based on EPA Guidance and practice, and data availability. Abt Associates conducted a preliminary analysis consistent with EPA's Interim Economic Guidance for Water Quality Standards (U.S. EPA, 1995), and publicly available data. We present a summary of the analysis and our conclusions below. Since we limited our review to the economic analysis, we did not review the appropriateness of the water quality targets and resulting effluent limitations, or other potential bases for a variance.

1 Background

The Sun Prairie WWTF is a two-cell lagoon system that includes an aerated cell equipped with floating draft-tube coarse bubble diffusers and a mixer, followed by a facultative cell equipped with mixers only, and then by effluent disinfection using ultraviolet (UV) light (Montana DEQ, 2012). Based on recent discharge monitoring report (DMR) data, nutrients in the facility's discharges have been as high as 19.4 milligrams per liter (mg/L) total nitrogen (TN) and 5.16 mg/L total phosphorus (TP). Future average monthly limits for the facility would be 15.3 mg/L TN and 1.3 mg/L TP. Therefore, the facility could require upgrades to comply with the new limits.

2 Estimating Costs

We developed a preliminary estimate of incremental compliance costs to reach these permit limits using a Water Environment Research Foundation (WERF) report (WERF, 2011) that provides estimates of costs for hypothetical treatment trains providing various levels of nutrient removal. Specifically, Table 4-3 of WERF (2011) provides unit cost data that are based on flow (e.g., dollars per gallon per day capacity) for each of several levels of treatment. The WERF treatment levels are designed to meet the nutrient limits shown in Exhibit 2-1.

Exhibit 2-1: WERF (2011) Treatment Level Objectives

Level	Total Nitrogen (mg/L)	Total Phosphorus (mg/L)
1	No removal	No removal
2	8	1
3	4 to 8	0.1 to 0.3
4	3	0.1
5	<2	<0.02

As a lagoon system, the facility's existing treatment train is not equivalent to any of the WERF levels. Also, based on the DMR data, the facility does not appear to be providing significant

nutrient removal. Therefore, for this analysis, we assume the existing equipment at the facility would need to be abandoned and replaced with a WERF-equivalent mechanical treatment train. The method used here to calculate incremental compliance costs does not include the costs of closing the existing lagoons. Therefore, the cost estimates might understate actual compliance costs. On the other hand, the facility already includes UV disinfection. The facility would likely retain this equipment, instead of installing a new sodium hypochlorite disinfection system, which is included in the WERF costs. It also is possible, although not certain, that some of the other existing equipment might be reused in the new treatment train (e.g., intake and effluent discharge equipment, existing aerators). Because they include the costs of equipment, particularly disinfection equipment, that already exists at the facility, the cost estimates over estimate potential compliance costs.

The facility's permit statement of basis (Montana DEQ, 2012) reports a design flow average of 0.189 million gallons per day (MGD) and a maximum daily design flow of 0.66 MGD. It reports an actual average flow of 77 gallons per minute for the period January 2009 through May 2012. Converting the units of measurement assuming 24 hour per day operation, this average flow is equal to 0.11088 MGD. For this analysis, we use the design flow average of 0.189 MGD to estimate capital costs the WERF capital estimates are scaled to an annual average design flow.[1] We use the actual average flow of 0.11088 MGD to estimate operating costs because long-term ongoing operating requirements are most likely to reflect this flow.

To meet a future nutrient limit of 15.3 mg/L TN would require treatment corresponding to WERF level 2. This level of treatment would also meet a future nutrient limit of 1.3 mg/L TP. For level 2 treatment, WERF (2011) estimates capital costs of $12.7 million per MGD capacity and operations cost of $350 per million gallons treated. Applying these costs to the design and average flow for Sun Prairie results in a total capital cost of $2.4 million and an operating cost of approximately $14,200 per year (assuming year-round operation). We used the Engineering News Record (ENR) construction cost index (CCI) to escalate capital costs to current dollars by multiplying by 1.08.[2] Because WERF's operating costs are based on energy and chemical costs, we used the consumer price index (CPI) to escalate operating costs to current dollars by multiplying by 1.05.[3] This escalation results in a total incremental capital cost of $2.6 million and an incremental operations cost of approximately $14,900 per year in current year dollars.

The WERF (2011) unit operating costs include energy and chemical costs only, not labor. Although incremental labor requirements can be minimized when automated controls are

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[1] The WERF estimates also assume a peaking factor of 3. In comparison, based on the reported design average and maximum flows, the existing Sun Prairie facility appears to be designed for a peaking factor of approximately 3.5. If facility upgrades were designed using this higher peaking factor, the cost estimates here would underestimate actual costs.

[2] The average ENR CCI for 2014 was 9806 and the average ENR CCI for 2011 was 9070, resulting in an escalation factor of 9806 / 9070 = 1.08.

[3] The CPI for 2014 was 236.736 and the average CPI for 2011 was 224.939, resulting in an escalation factor of 236.736 / 224.939 = 1.05.

present, labor costs can be highly dependent on site-specific factors (U.S. EPA, 2008). For conventional activated sludge treatment as a whole, however, estimated labor costs can be as much as two-thirds of total annual operating costs (Young et al., 2012). Therefore, to account for potential incremental labor, we multiplied the incremental operating cost by three to $44,700 per year. Note that this incremental operating cost assumes year-round operation. Actual incremental operating costs would be lower if the nutrient criteria do not apply year-round and if elements of the upgraded treatment system could be shut down, bypassed, or placed on standby during the period when the criteria do not apply.

We annualized incremental capital costs over 20 years using an interest rate for revenue bonds of 2.5%, which is the current rate for the Montana Water Pollution Control State Revolving Fund (Montana DEQ, 2015). We added the incremental operating costs, including labor, to arrive at a standard total annualized cost estimate of $211,483 per year.

For purposes of sensitivity and uncertainty analysis, we also examined the impact of alternative assumptions used in Montana DEQ's previous economic analysis (Blend and Suplee, 2011). Montana DEQ's previous analysis examined various scenarios that included two different interest rates: 5% and 7%. The previous analysis also used a different method to estimate labor costs. Instead of applying a multiplier to annual operating costs, it estimated labor costs as a percentage of annualized capital costs. The scenarios examined used two different labor percentages: 15% and 48%.[4]

Based on the range of scenarios examined in Montana DEQ's previous analysis, we calculated results using two sets of alternative assumptions. Alternative 1 combines the lower interest rate of 5% with the lower labor estimate of 15% of annualized capital cost. Alternative 2 uses the higher interest rate of 7% and the higher labor estimate of 48% of annualized capital cost. Exhibit 2-2 compares our cost estimates with results using these alternative assumptions.

Exhibit 2-2: Comparison of Standard and Alternative Cost Estimates

Scenario	Interest Rate	Labor	Total Annualized Cost ($/year)
Standard	2.5%	2/3 of total operating cost	$211,483
Alternative 1	5%	15% of annualized capital cost	$254,831
Alternative 2	7%	48% of annualized capital cost	$378,122

3 Municipal Preliminary Screener

To demonstrate that the costs of pollution control would result in substantial and widespread economic and social impacts justifying a variance, the discharger must first demonstrate that it would face substantial financial impacts through a two-part test, including a municipal

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[4] Montana DEQ's previous analysis also examined different assumptions about the percent of flow treated by reverse osmosis. Because meeting future nutrient limits at this facility would not require reverse osmosis, those assumptions have no effect on the analysis here.

preliminary screener (MPS) and Secondary Test.

The first step in determining whether impacts will be substantial involves combining the estimated compliance costs with existing pollution control costs, and comparing the result (on a per-household cost basis) to median household income (MHI) to obtain an MPS value.

Information about existing wastewater treatment costs was provided by the General Manager of the Sun Prairie Village County Water and Sewer District (Decker, 2015). The District serves 510 households, plus 4 commercial users (including 2 bars, a gas station, and a shop). Each user pays a flat rate of $26.90 per month for sewer services (or $322.8 annually), except the shop which pays for services based on flow, with an average of $135 per month (or $1,620 annually). As such, we estimated that existing wastewater treatment costs are $167,216 ($322.8 times 513 users, plus $1,620). Of this amount, $164,628 is borne by households ($322.8 times 510 households).

Exhibit 3-1 shows the assumptions and data sources for the MPS calculation. Based on the assumptions and data shown, we calculate that the project could result in an MPS of 1.4%. Using the alternative interest rates, labor costs, and annual project costs shown in Exhibit 2-2 (and all other assumptions the same as Exhibit 3-1), the MPS would be 1.6% (Alternative 1) or 2.0% (Alternative 2). According to EPA's 1995 Guidance, this indicates that the project may result in substantial economic impacts, and a Secondary Test is optional.

Exhibit 3-1: Municipal Preliminary Screener for Sun Prairie Village

Variable	Estimate	Data Source
Capital costs	$2.60 million	See Section 2
Annual O&M costs (electricity, chemicals, and labor)	$44,700	See Section 2
Interest rate for revenue bonds (for annualizing capital costs)	2.5%	Current interest rate for Montana Water Pollution Control State Revolving Fund (Montana DEQ, 2015)
Time period of financing (for annualizing capital costs)	20 years	
Annual project costs	$211,483	Annualized capital plus annual O&M
Number of households served	510	Decker (2015)
Existing annual per-household costs	$322.8	Flat monthly rate ($26.90) from Decker (2015) times 12 months
Total annual existing costs	$167,216	$322.8 in annual user fees for 510 households and 3 commercial users, plus $1,620 in annual user fees for an additional commercial user (from Decker, 2015)
Annual existing costs paid by households	$164,628	Annual per-household cost times number of households
Amount of annual existing and project costs paid by households	98.45%	Annual existing costs paid by households divided by total annual existing costs

Household share of annual project costs	$208,209	Annual project costs times share of project costs to be paid by households
Annual per-household pollution control project cost	$408	Household share of annual costs divided by number of households
Total annual cost of pollution control per household	$731	Household existing costs plus project costs
Median Household Income (2013$)	$51,447	U.S. Census Bureau (2013b)
Median Household Income (2014$)	$52,282	Adjusted based on Consumer Price Index (2014=236.74; 2013=232.96)
Municipal Preliminary Screener (MPS)	1.4%	Total annual cost of pollution control divided by median household income
Alternative 1 MPS[1]	1.6%	
Alternative 2 MPS[2]	2.0%	

O&M = operations and maintenance
1. Alternative 1 assumes an annual project cost of $254,831 (Exhibit 2-2), which yields annual per-household project costs of $492 ($254,831divided by the number of households) and total annual household costs of $815 (annual household project costs plus existing annual household costs).
3. Alternative 2 assumes an annual project cost of $378,122 (Exhibit 2-2), which yields annual per-household project costs of $730 ($378,122 divided by the number of households) and total annual household costs of $1,053 (annual household project costs plus existing annual household costs).

4   Secondary Test

If the MPS indicates that the economic effects of the pollution control project may be substantial (with a borderline impact being between 1% and 2% and a large impact being over 2%), the next step is to use the Secondary Test to evaluate the community's ability to obtain financing as well as general socioeconomic health. The Secondary Test is designed to build upon the characterization of the financial burden identified in the MPS. Indicators describe pre-compliance debt, socioeconomic, and financial management conditions in the community. For more information on the need for the Secondary Test, see the Appendix and U.S. EPA (1995).

Section 4.1 shows the Secondary Test for Sun Prairie using U.S. EPA (1995) and Section 4.2 shows Montana's alternative Secondary Test (Montana DEQ, 2014), which eliminates debt and financial management indicators in favor of socioeconomic indicators. For more details on Montana's modified Secondary Test, see Exhibit 4-1 and Section 4.2.

Exhibit 4-1. Comparison of EPA 1995 Guidance and MT DEQ Guidance: Secondary Test of Substantial Impact, Public Entities

EPA Indicator	Interpretation	MT DEQ Indicator
Debt Indicators		
Bond Rating	Indicates the community's credit capacity.	None
Overall Net Debt as a Percent of Full Market Value of Taxable Property	Indicates the debt burden on residents and measures the ability of the community to issue additional debt.	None
Socioeconomic Indicators		
Unemployment Rate	Indicates the general economic health of the community.	Unemployment Rate

Median Household Income	Indicates overall wealth of the community.	Median Household Income Poverty rate[a] LMI percentage rate[b]
Financial Management Indicators		
Property Tax Revenue as a Percent of Full Market Value of Taxable Property	Indicates the funding capacity to support new expenditures, based on the wealth of the community.	(Property Tax + Fees + Revenues)/MHI/Population × 100[c]
Property Tax Collection Rate	Indicates the efficiency of the tax collection system and measures how well the local government is administered.	None
a. Evaluated as follows: strong: < 6%; midrange: 6% to 40%; and weak: >40%. b. Low to medium income (LMI) percentage rate, defined as the percent of population earning 200% of the poverty threshold or below. Evaluated as follows: strong: < 10%; midrange: 10% - 45%; weak: >45%. c. Evaluated as follows: strong: <1.5; midrange: 1.5 – 3.5; weak: >3.5.		

4.1   Secondary Test Based on EPA Guidance

To conduct the Secondary Test for Sun Prairie using U.S. EPA (1995) Guidance, we used socioeconomic data from the U.S. Census Bureau (2013a; 2013b; 2013c), information provided by the District's General Manager (Decker, 2015), and some data from Cascade County's 2013 Annual Financial Report (AFR; Cascade County, 2014).

Debt Indicators
Debt indicators include the bond rating, which provides a measure of the creditworthiness of the community, and the overall net debt as a percent of the full market value of taxable property, which is a measure of the debt burden on residents in the community and a measure of the ability of local government jurisdictions to issue additional debt.

We did not find a bond rating for the District. As noted by U.S. EPA (1995), the absence of a bond rating does not indicate strong or weak financial health. Consistent with U.S. EPA (1995), we excluded this metric from the calculation of the Secondary Score.

The Sun Prairie Village County Water and Sewer District does not collect any property taxes, and it does not have any debts that are repaid by property taxes. However, Decker (2015) reports that the District currently has $1.7 million in outstanding revenue bonds that are repaid by user fees. Although this debt is not repaid by property taxes, it impacts the community's ability to take on debt, which is the purpose of this indicator. Had this additional debt been financed by an entity capable of issuing general obligation bonds rather than revenue bonds, for example, it would be repaid via property taxes and included in the debt used for this indicator.

Additionally, the households served by the District pay property taxes to Cascade County, which has approximately $2,439,588 in outstanding long-term debt (including general obligation bonds and other loans). Given a population of 81,621 people, this equates to approximately $30 in debt

per person in the county, or $41,310 in overlapping debt for Sun Prairie village ($30 times 1,377 people from U.S. Census Bureau, 2013a).

The District does not collect any property taxes, and the Village of Sun Prairie is unincorporated. As such, the market value of taxable property is not available. U.S. EPA's 1995 Guidance specifies that, in such cases, the overall net debt per capita metric should be used in place of the overall net debt as a percent of full market value of taxable property. Based on a population of 1,377 people (U.S. Census Bureau, 2013a), the net debt per capita for Sun Prairie is $1,265 and the community is mid-range on this metric.

Socioeconomic Indicators
Socioeconomic indicators include community-specific MHI (compared with the state level MHI) and the local unemployment rate (compared with the national rate). As shown in Exhibit 3-1, MHI for Sun Prairie for the period 2009 to 2013 was $51,447. Data from the U.S. Census Bureau (2013b) indicates that MHI for Montana during the same period was $46,230.[5] Since the City's MHI is more than 10% above the state MHI, the City is strong on this indicator.

According to the United States Bureau of Labor Statistics, unemployment in Cascade County was at 3.9% in June 2015, compared with a national unemployment rate of 5.3%. Since the local rate is more than 1% below the national rate, the City is also strong on this indicator.

Financial Management Indicators
Financial management indicators include the property tax revenues as a percent of full market value of taxable property ("property tax burden") and property tax collection rate. Property tax burden indicates the funding capacity to support new expenditures, based on the wealth of the community, while the property tax collection rate provides an indicator of the efficiency of the tax collection system and a measure of how well the local government is administered.

As noted above, the full market value of taxable property is not available for Sun Prairie. In such cases, U.S. EPA's 1995 Guidance directs that this metric should be dropped. As such, we did not calculate the property tax revenues as a percent of full market value of taxable property.

Data from Cascade County (2014) indicates that the County has a property tax collection rate of 98.2%, which is considered strong for this metric. However, as noted in the 1995 Guidance, this metric is meant to indicate the efficiency of the tax collection system and measure how well the local government is administered. As such, the County tax collection rate may not be a good indicator of the District's efficiency and administration. However, since the District does not collect property taxes, it does not have a property tax collection rate and we cannot calculate a value for this metric.

Secondary Test Data and Results
Exhibit 4-2 shows available data for the Secondary Test and Exhibit 4-3 provides the Secondary

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[5] Income is not updated to current dollar years for the Secondary Test.

Score.

Exhibit 4-2: Secondary Test Data Based on EPA Guidance

Variable	Value	Data Source
Population	1,377	U.S. Census Bureau (2013a)
Median Household Income (2013$)	$51,447	see Exhibit 3-1
State Median Household Income	$46,230	U.S. Census Bureau (2013b)
Community unemployment rate	3.9%	June 2015 unemployment rate for Ravalli County from Bureau of Labor Statistics
National unemployment rate	5.3%	June 2015 unemployment rate for United States from Bureau of Labor Statistics
Market value of taxable property	NA	
Property tax collection rate	NA	
Direct net debt	$1,700,000	Outstanding bonds for a water system improvement (Decker, 2015)
Overlapping debt	$41,310	Per-capita debt for Cascade County based on Cascade County (2014) times community population
Property tax revenues	NA	

Exhibit 4-3: Secondary Score Based on EPA Guidance

Indicator	Result	Score
Bond Rating	NA	NA
Overall Net Debt per Capita[1]	$1,264	2
Unemployment	3.9% [compared to 5.3% nationally]	3
Median Household Income[2]	$51,447 [compared to $46,230 statewide]	3
Property Tax Revenues as a Percent of Full Market Value of Taxable Property	NA	NA
Property Tax Collection Rate	NA	NA
Secondary Score[3]		*2.7*

Source: See Exhibit 4-2.
NA = data not available to calculate metric, and it was excluded from the calculation of the secondary score.
1. If the full market value of taxable property is not available, overall net debt per capita is used in lieu of net debt as a percent of market value of taxable property.
2. Not updated for the Secondary Test.
3. Average of scores for the following indicators: Overall net debt per capita, unemployment, and median household income.

4.2   Secondary Test Based on Montana Alternative

In comparison with EPA's 1995 Guidance Secondary Test, the Montana DEQ (see Montana

DEQ, 2014) has modified the Secondary Test such that much of the financial and debt information is not considered (eliminating both debt indicators in favor of socioeconomic indicators, and eliminating or altering both financial management indicators), but more information on household income is provided.[6] Exhibit 4-4 shows the metrics and interpretation using Montana's alternative approach. This section calculates the Secondary Score based on Montana's alternative approach.

Exhibit 4-4. Secondary Test Based on Montana DEQ Guidance

Indicator	Weak (Score of 1)	Mid-Range (Score of 2)	Strong (Score of 3)
Poverty Rate	More than 40%	6 to 40%	Less than 6%
Low to Medium Income Percentage (LMI)	More than 45%	10 to 45%	Less than 10%
Unemployment	More than 1% above state average	State average	More than 1% below state average
Median Household Income	More than 10% below state median	State median	More than 10% above State median
Property Tax, fees and revenues[1] divided by MHI and indexed by population	More than 3.5	1.5 to 3.0	Less than 1.5
1. The "property tax, fees, and revenues" metric includes the following items from the Statement of Activities: charges for services, fees, and forfeitures for governmental activities; charges for services, fines, and forfeitures for business-type activities; and property taxes for governmental activities.			

For the unemployment rate and MHI, we used the same data sources as cited in Exhibit 4-2. Because the local unemployment rate is within 1% of the state unemployment rate,[7] the City is mid-range on this indicator. As with the results using EPA's Guidance, the City is strong on the MHI indicator since the local MHI is more than 10% above the state-level MHI. For the poverty rate, data from U.S. Census Bureau (2013b) indicates that the 9.4% of all families in Sun Prairie are below the poverty threshold, which is in the mid-range according to Montana's Guidance. Based on data from U.S. Census Bureau (2013c), the Village is also mid-range on the "Low to Medium Income Percentage" (LMI) indicator, with 24.5% of families earning less than 200% of the poverty threshold.

Montana's final Secondary Test indicator is the "Revenues, Taxes, and Fees Burden Index," which is calculated as:

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[6] This approach assumes that "the ability of a community to finance a project may be dependent upon existing household financial conditions within that community" (Montana DEQ, 2014).

[7] Note that Montana's alternate Secondary Test compares the local unemployment rate to the state, whereas EPA's Guidance compares it to the national rate.

This metric is intended to reflect the government revenue burdens of the local population, and is calculated based on information from the Statement of Activities in annual financial reports. Since the City does not maintain annual financial reports, we did not calculate this metric.

Exhibit 4-5 shows the Secondary Test using Montana DEQ Guidance. The City has a Secondary Test score of 2.3 using this alternative approach (compared with 2.7 using EPA's Guidance).

Exhibit 4-5: Secondary Score Metrics Based on Montana DEQ Guidance

Indicator	Result	Score	Data Source
Poverty Rate	9.4%	2	U.S. Census Bureau (2013b)
Low to Medium Income Percentage (LMI)	24.5%	2	U.S. Census Bureau (2013c)
Unemployment	3.90% [compared with 3.90% for the state]	2	June 2015 unemployment rate for Cascade County and Montana from Bureau of Labor Statistics
Median Household Income	$51,447 [compared with $46,230 for the state]	3	U.S. Census Bureau (2013b)
Property Tax, fees and revenues divided by MHI and indexed by population	NA	NA	NA
Secondary Score[1]		*2.3*	

NA = data not available to calculate metric, and it was excluded from the calculation of the secondary score.
1. Average of scores for the four available indicators.

5 Substantial Impact Analysis

Given an MPS of 1.4% (or 1.6% to 2% using alternative scenarios; see Section 3), and a Secondary Score of 2.7 or 2.3 (using EPA's 1995 Guidance or Montana's modified Guidance, respectively; see Section 4), the Substantial Impacts Matrix (Exhibit 5-1) indicates that impacts from the project are either unlikely to be substantial or uncertain/borderline, respectively.

Exhibit 5-1. Substantial Impacts Matrix

Secondary Score	Municipal Preliminary Screener		
	Less than 1%	1% to 2%	Greater than 2%
Less than 1.5	?	X	X
1.5 to 2.5	✓	?	X
Greater than 2.5	✓	✓	?

Source: U.S. EPA (1995)
X = impact is likely to be substantial
? = impact is borderline
✓ = impact is not likely to be substantial

6 References

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7 Appendix: Description of the Economic Guidance for Water Quality Standards

In order to demonstrate that there would be substantial and widespread economic and social impacts justifying a variance, the discharger must demonstrate that it would face substantial financial impacts, and that the affected community would have significant adverse impacts as a result (i.e., widespread impacts). EPA's 1995 Guidance (U.S. EPA, 1995) outlines the specific steps that the discharger must follow to make these demonstrations. This appendix provides a brief overview of the Guidance as applicable to an entity in the public sector. For a more detailed description of the analysis, see U.S. EPA (1995).

First, to determine whether the pollution control project would entail a substantial impact to an entity in the public sector, there is a two part test. The first part of the test, called the Municipal Preliminary Screener (MPS), is a screening-level ratio designed to trigger additional tests or screen out the possibility of substantial impacts. Since municipalities will pass costs on to households and businesses, this screening is based on how household pollution control costs compare to household income. Generally, if the MPS is less than 1% (i.e., annual household pollution control costs would be less than 1% of median household income), there will not be a substantial economic impact. If the MPS is higher than 1%, then the impacts may be substantial and the discharger proceeds to the second part of the test.

The second part of the test involves calculating multiple indicators (e.g., bond rating, debt ratio, and tax collection ratio) designed to characterize the financial health and socioeconomic status of the community that will bear the costs of the pollution control. This is the Secondary Test. **Exhibit 7-1** shows the indicators used in the Secondary Test and the scores associated with them.[8] The overall Secondary Score is the average of the indicators used.

Exhibit 7-1. Secondary Test Indicators in EPA's Guidance

Indicator	Secondary Indicator Scores		
	Weak (Score of 1)	Mid-Range (Score of 2)	Strong (Score of 3)
Bond Rating	Below BBB (S&P) Below Baa (Moody's)	BBB (S&P) Baa (Moody's)	Above BBB (S&P) Above Baa (Moody's)

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[8] In some cases, if data for a particular indicator is not available, the Guidance directs users to alternative indicators. See U.S. EPA (1995) for more details.

Overall Net Debt as Percent of Full Market Value of Taxable Property	Above 5%	2% - 5%	Below 2%
Overall Net Debt Per Capita	Greater than $3,000	$1,000 - $3,000	Less than $1,000
Unemployment	More than 1% above national average	National average	More than 1% below national average
Median Household Income	More than 10% below state median	State median	More than 10% above state median
Property Tax Revenues as a Percent of Full Market Value of Taxable Property	Above 4%	2% - 4%	Below 2%
Property Tax Collection Rate	< 94%	94% - 98%	> 98%

The MPS and Secondary Test results are evaluated jointly, using the Substantial Impacts Matrix, as shown in **Exhibit 7-2**.

Exhibit 7-2. Substantial Impacts Matrix

Secondary Score	Municipal Preliminary Screener		
	Less than 1%	1% to 2%	Greater than 2%
Less than 1.5	?	X	X
1.5 to 2.5	✓	?	X
Greater than 2.5	✓	✓	?
Source: U.S. EPA (1995)			
X = impact is likely to be substantial			
? = impact is borderline			
✓ = impact is not likely to be substantial			

If the evaluation indicates that the pollution control project will place substantial economic burdens on the discharger, the next step is to determine whether the impacts will also be widespread in the surrounding community. This step involves estimating socioeconomic changes due to pollution control costs, such as loss of employment, changes in property values, and higher taxes. In this step, the analysis should consider the direct and indirect effects of control costs. Also, expenditures on pollution control costs are not likely to vanish from the community. These expenditures become business revenues and household incomes that can offset adverse financial impacts experienced by the affected entities.